The Automobile Speaks It tells you what it is, what it own it is, what it tells you what it is, what it requires and it asks to be troated fairful for the feel for This Popular In the catholiton and by the large of Commerce. New York and clieston in the exhaust traves and the cylinder, while the exhaust valves and their cam shaft are on one side and the chaust where and show for the other walves and their cam shaft are on one side and the chaust walves and their cam shaft are on one side and the chaust valves motor. The had motor shown in figure 2, differs from the Thead motor the transport of the chaust valves and their cam shaft are on one side and the chaust valves and their cam shaft are on one side and the chaust valves and their cam shaft are on one side and the chaust valves and their cam shaft are on one side and the chaust valves and their cam shaft are on one side and the chaust valves and their cam shaft are on one side and the chaust valves and their cam shaft are on one side and the chaust valves and their cam shaft on the other. The Labed motor, shown in figure 2, differs from the T head motor only in the chaust valves and their cam shaft on the chere is considered to the consider, the chaust valves and their cam shaft on the chere is considered to the consider the chaust valves and their cam shaft on the chere is considered to the considering the position of the valves. The this motor the valves are all placed on the one side, the action out the other side, while in the L head the same as that of the T head motor. Of course, in the T head motor the fresh gases enter on one side and the exhaust gases go to to the other side, while in the L head the same as that of the T head motor cheryllader engine and three valves are opened by two branches for the fort or planter ongine and three branches for the story cylinder, regime and the valves are opened by being pushed dawn. The cam shaft is the walves are opened by being pushed dawn. The cam shaft is the walves in the side of the constant of the came of the constant of the

son for this is that it will permit the inlet manifold to be built with only to branches for the four cylinder engine and three branches for the six inder engine.

The overhead valve engine has the valves placed on top, or in the head of scylinders. In both the T and L head motors the valves are opened by the property of the propert The overhead valve engine has the valves placed on top, or in the head of the cylinders. In both the T and L head motors the valves are opened by being pushed up against the spring, but in the overhead engine they are opened by being pushed down. The cam shaft is the same, but between the valve lifter and the valve a push rod and rocker arm are placed.

Figure 3 shows the overhead, or valve in the head motor. D is the valve stress of semi-oval windows, where in the T and L head motors), and B is the push rod, which rests in a hollow on the valve lifter, while C is the rocker arm and E the valve stem.

You will note that as A is raised B also is raised, and that because of the rock arm action the valve stem and therefore valve is pushed down, and so the valve is opened.

In most overhead valve engines the valve is contained in a valve cage, as is shown in figures 4 and 5. This valve cage is simply a castiron cylinder how the paring a hole in the side and one in the bottom, which is closed by the valve.

In most overhead valve engines the valve is contained in a valve cage, as is shown in figures 4 and 5. This valve cage is simply a castiron cylinder having a hole in the side and one in the bottom, which is closed by the valve. These valve cages fit snugly in holes bored in the head of the cylinders, each cylinder having an inlet valve and cage and an exhaust valve and cage.

having a hole in the side and one in the bottom, which is closed by the valve. These valve cages fit snugly in holes bored in the head of the cylinders, each grefering to figure 6 you will note that this represents a cross section of the head of a single cylinder. The hatched (lined) rings U and V represent the valve cages, while R and S are the holes in their bottom. As the piston travels downward on the suction stroke, due to the action of the cam, push rod and rocker arm, the valve will open the hole S and the mixture will come in the travels downward on the suction stroke, due to the action of the cam, push rod will be closed, but on the exhaust stroke the exhaust valve will be pushed down, thus opening R, and the burned gases will come up and out of the cylinder through R, then through the hole P, passage M and so out through the valves are to be ground the entire cage, valve and use of hand printed cretains of the valance of hand printed cretains of the capture of the control of the capture of the capture

the valve cages, while R and S are the holes in their bottom. As the piston travels downward on the suction stroke, due to the action of the cam, push rod and rocker arm, the valve will open the hole S and the mixture will come in through the inlet manifold, passage L, hole O in the side of the cage, and then sown into the cylinder through S. On the compression and power stroke the valves will be closed, but on the exhaust stroke the exhaust valve will be pushed down, thus opening R, and the burned gases will come up and out of the cylinder through R, then through the hole P, passage M and so out through the exhaust manifold.

When the valves are to be ground the entire cage, valve and valve spring are removed assembled. This is done by removing the rocker arm and the large nut which holds the cage in place, and then inserting the end of a screw-driver or tire tool under the spring and prying the cage out of its hole. A block of wood may have to be used as a fulcrum,

Of late what is known as the removable head motor has come to be popular. In this, instead of having the cylinders in one piece the top portion or head can be removed by unscrewing a number of bolts. In this way the valves and pistons are more easily gotten at for grinding or carbon removing. The dotted lines show the joint between the head and cylinder block.

In the case of the overhead valve and removable head there are no valve

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In the case of the overhead valve and removable head there are no valve cages as explained above, the entire head with the valves assembled being removed and taken to a bench where the valves can be removed and ground.

To make the head tight a gasket of asbestos covered with brass sheeting is inserted under the head. When installing this the joint side of it should be down.

MOTORING THROUGH THE ALLEGHENIES

New Jersey, Pennsylvania and Maryland Furnish Fine Fall Trip.

Motorists are now beginning to look toward the South for touring and to interest these tour enthusiasts. The Automobile Club of America through its chief roadman, O. M. Weils, gives us a route this week in the Allegheny Mountains of Pennsylvania and Maryland.

October makea, a splendid month for motoring and by following the line suggested, a delightful trip will be enjoyed.

The main trunk line between New York and Philadelphia lies over the Lincoln Highway, which goes through New-The main trunk line between New York and Philadelphia lies over the Lincoln Highway, which goes through Newark, New Brunswick and Princeton to Trenton, and this is all in good condition with the exception of a short detour in the village of Rahway. From Trenton on the road is under construction, but this can be avoided by going up to Yardley and then over a parallel road connecting with the trunk line at Eustleton. There is also some construction in progress on the latter route. Motorists can get into Pennsylvania over the south New Jersey trunk line, which is in fair condition at the present time, by going through Freehold to Lakewood then over the Atlantic City route to Pleasantville, where the trunk line can be joined, which connects with the Penns Grove Ferry to Wilmington. A good road is available into Philadelphia from Absecon. The Lincoln Highway, which goes west out of Philadelphia via the old Lancaster Pike, is all open and in good condition to Pittsburgh, with the exception of a short detour, due to construction at Downingtown. Leaving Philadelphia the first ten miles goes through a pretty residential section to Bryn Mawr, where the famous women's collegs of the same name is located. From there on the country is more open and rolling and the Lincoln Highway passes through many small farming communities with the land in a splendid state of cultivation all the way to Gettysburg. The cities of Coatesville, Lancaster and York are also passed.

From Gettysburg, South Mountain is crossed via Black Gap, where the Pennsylvania State Forest is located, to Chamberburg. Then through a fairly level stretch entering the foothills of the Alleghenies at McConnelleburg. From McConnelleburg commences the ascent of Cove Mountain, which rises just beyond Inspiration Point, also known as Grand View. A view of the surrounding country from this point is entrancing, especially in the autumn when the foliage is so beautiful.

After erossing the Cove Mountain. coln Highway, which goes through New-



COLE NOW SOLD IN MUCH LARGER QUARTERS

To meet the requirements of increasing business the Cole Motor Company, Inc., of which Russell L. Engs is president, has just moved to larger quarters at 1848-1850 Broadway, corner Sixty-first street. Mr. Engs is celebrating the opening by showing a splendid line of open and closed custom built bodies.

ESSEX CARS HAVE

CONTINUED PROGRESS IN AUTOMOBILE INDUSTRY

In August, normally the lowest sea-sonal level in the automotive industry, sales of parts and equipment to car and truck manufacturers moved for-ward more than 1 per cent beyond the

charming country which is "up hill and down dale" all the way. Motorists who so desire may include a side trip in their litnerary by going to Washington, then hack to Baltimore by turning south from Ridgeville, which is eighteen miles beyond Frederick on the Frederick-Baltimore route. From Baltimore to Philadelphia there is a choice of two routes, one via Belair, Rissing Sun and Kennett Square. The latter route is preferable at the present time as there are some sctions under repair on the Wilmington route. The return to New York from Philadelphia can be made by going south to Atlantic City, then through Lakewood, Freehold, South Amboy and the Staten Island Ferry to New York, or the road via the New Jersey shore can be taken by turning off at Lakewood and going through Point Pleasant, Asbury Park and Sea Bright, then over the Rumson road and Harding road through Red Bank and Keyport to South the crowded streets of New York.

BIG AUTO SHOW PLANS GET UNDER WAY HERE

enbacker, Roamer, Saxon, Sayers, Standard, Stanley, Stearns-Knight, Stephens

WILLS SAINTE CLAIRE NOW IN FISK BUILDING

The Wills Sainte Claire Company of New York have removed to temporary headquarters in the Fisk Building at Broadway and Fifty-seventh street, which showroom they will occupy until the permanent headquarters in the same building will be ready, about Novem-her 1

building will be ready, about November 1.

The latest and most advanced product of the C. H. Wills & Company motor car factory at Marysville, Mich., is the coupe model, distribution of which started in volume within the last few weeks. This model, like those of the touring car and roadster, has met with a most gratifying demand from buyers in all parts of the country. Production of the sedan, which will complete the company's schedule in body designs for the first year, will be established during the latter part of this month.

month.

One of the most striking features of the Wills-Sainte Claire coupe is its wide and comfortable rear seat, the riding qualities of which are most restful. It affords plenty of space for two passen-

affords plenty of space for two passengers.

The coupe is designed for four passengers and is set unusually low, the distance from the top of the roof to the ground being only 73 inches. The body is of composite construction with aluminum panels. The driving seat has 28½ inches leg room from the front edge of the cushion to the dash. The back seat is set well back from the driver's seat and is 36 inches wide and 20 inches deep. A folding chair tilts under the cowl when not in use and opens into position beside the driver's seat facing forward.

Grade, reaching about the same altitude. Just beyond Breezewood the Ragatown branch of the Juniata River is crossed and followed to Bodford, where good hotel accommodations are available, and if desired, the trip can be continued through the mountains via the Lincoln Highway, over Laurel Ridge and Chestnut Ridge to Greensburg and then on to Pittsburgh. From Pittsburgh run south to Washington, Pa., connecting with the fold National Trails. From Washington, Pa., the return trip is made by running east to Uniontown, again entering the foothills of the Alleghenies and following a scenic, hard surfaced road, which whids around through the mountains, the most prominent known locally as Negro Mountain, Meadow Mountain and Big Savage Mountain, to Cumberland, In the heart of the Alleghenies. This is a delightful spot to visit for a few days. On leaving Cumberland, Martin Mountain, Warrior, Polish, Green Ridge, Town Hill and Sideling Hill are crossed to Hagerstown. From Hagerstown to Bajtimore the road is all hard surfaced and in accellent condition, traversing charming country which is "up hill and down dale" all the way. Motorists who so desire may include a side trip in their timerary by going to Washington, the many proved for a "no. accident" week in the street way in the condition. Traversing charming country which is "up hill and down dale" all the way. Motorists who so desire may include a side trip in their timerary by going to Washington, the many proved for a "no. accident" week in the street way i ditions in the automotive industry made public to-day by the Motor and Accessory Manufacturers Association.

Purchases of parts, units and equipment by automobile passenger car and motor truck manufacturers from three hundred parts and accessory manufacturers show an increase of 1.31 per cent. In July the increase was 1.63 per cent. and in June the curve had shown a decrease of 15.19 per cent. During August the automotive industry also showed betterment in two dother fundamental respects—the total past due accounts decreasing 17.06 per cent. and the total of notes outstanding dropping 5.30 per cent.

'NO ACCIDNT' WEEK PLANNED FOR NEW YORK

The difference of the first of the new Durant cars to be delivered to a customer has just returned to New York Elva fust of the hands of its owner. Lieut. Join J. Hannigan of the New York Fire Department. He started by way of Newburgh and visited Poughkeepsie, Kingston, Hudson, Albany, Troy, Herkimer, Utica, Syracuse, Waterloo, Geneva, Watkins, Penn Yan, Bath, Salamanca, Jamestown, Buffale and Niagara Falla. "I pulled Camillus Hill, outside of Syracuse, in high gear, a feat that few cars, even big sixes, can do," said Lieut. Hannigan. State street hill in Albany was easy with a capacity load. I wasn't trying for speed, because the car was new, but I got forty-seven miles an hour handily."

Mayor Hylan and Special Deputy Police
Commissioner Harriss were heartily approved by both, and the committee in charge of the campaign at the metropolitan division of the A. A. has received most cordial and unqualified promises of support and cooperation from practically all of the civic bodies in Greater New York, as well as from the press.

The campaign will be aimed directly at careless driving and the prevention of accidents, special attention to be given to the protection of children in the crowded streets of New York.

The report is dive the motor vehicle registration in New York State by counties for the most complete reports of its kind ever of seuded. And aside from giving the registration in most complete reports of its kind ever of the various types by counties for the most complete reports of its kind ever of the work of the work of the most complete most complete reports of its kind ever of the work of the most complete most complete reports of its kind ever of the work of the most complete reports of its kind ever of the most complete reports of its kind ever of the most complete reports of its kind ever of the most complete reports of its kind ever of the most complete reports of its kind ever of the most complete reports of its kind ever of the most complete most complete.

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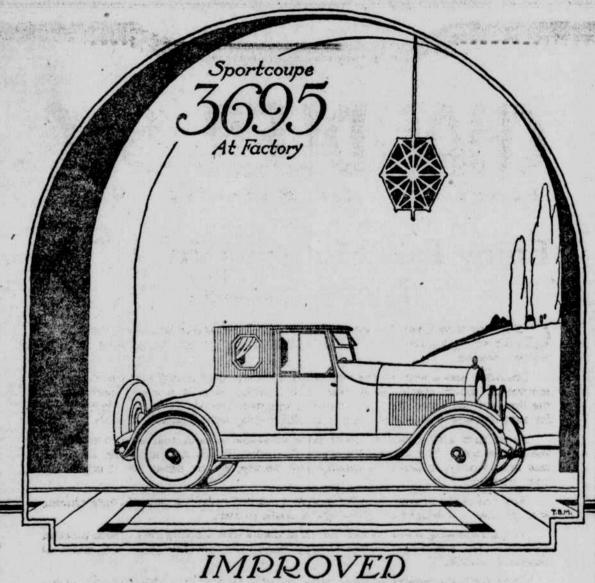
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